

OOCC Tank Sampling Guidance Document

1.0 Definitions and Materials

- 1.1 **FDA Good Manufacturing Practices (GMPs):** Established guidelines to help ensure production of safe, quality food.
- 1.2 **ISO 5555:** Standard followed in creation of this guidance document for ease of sampling various container types. Includes Table which outlines the sampling requirements from multiple Drums/Totes/small tanks less than 1510 gallons per container.
- 1.3 **Materials:** All materials used must be approved materials to minimize contamination or risk to the product (i.e.; stainless steel, PET, etc.).
- 1.4 **Thief (Left Picture):** Tool made of food-grade stainless steel which allows us the ability to accurately sample oil from a specified depth.
- 1.5 **Coliwasa (Right Picture):** Semi-reusable hand held "thief-like" device made of a tube with a rod in the middle and two stoppers on either side of the tube.



- 1.6 **Twine or Chain:** made of material approved to minimize contamination tied to Thief to lower into containers or tanks. Disposable preferred so minimize cross contamination of oils.
- 1.7 **Nitrogen Capping:** Act of purging container's/vessel's headspace of oxygen with nitrogen or another inert gas, and then applying an air-tight cap.
- 1.8 **Cleaning:** All re-usable materials shall be cleaned with soap and water followed by sufficiently dried so as to not contaminate any samples. Clean all sample materials with dish soap, hot water and a dish sponge.
- 1.9 **Gloves:** shall be worn at all times while handling food contact surfaces and sampling materials.

2.0 Sampling From Tanks with Access to Top

- 2.1 First prepare the appropriate number of bags for quantity of oil needed. Using food grade materials lower the thief down the top of the tank to collect samples at each phase of the tank. Final oil samples need to be comprised of 1-part Top 10% of the tank, 3- parts Middle of the tank, and 1-part Bottom 10% of the tank.
- 2.2 Securely tie one end of the twine/chain to the thief. Measure out enough twine to reach the bottom 10% of the tank. Make a knot half way on up the twine; this will reach the middle of the tank. Cut the twine and tie the end to the handle on the bucket.

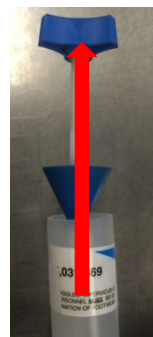
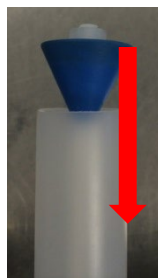
- 2.3 Carefully lower the thief into the tank holding onto the twine. Lower the thief to the bottom 10% of the tank. Carefully jig the thief about three times by pulling up on the twine and then letting the slack fall back out. This helps exchange the oil in the thief with the oil at the particular level being sampled. Carefully pull the thief back up.
- 2.4 While pulling the thief up, gently pinch the twine to squeeze out the excess oil. Empty the Sample into a sample container for further blending required.
- 2.5 Repeat steps above for the middle and bottom of tank samples.
- 2.6 Once all samples are pulled close the lid to the top of the tank. Clean all materials according to section above. The twine, gloves, and bags shall not be reused for any samples.
- 2.7 Blend samples together by measure out 200mL of the "Top" oil, 600mL of the "Middle" oil and 200mL of the "Bottom" oil.
- 2.8 All sample labels must include Date sampled, Lot Number, and Varietal.

3.0 Sampling From Tanks without Access to Top

- 3.1 Open Sample port and purge 200mL of oil from port to get to fresh oil. Dispose of the 200mL pulled.
- 3.2 Place sample bottles at port and fill up desired quantity of sample bottles.
- 3.3 Samples from individual small tanks do not need blending if it is one lot per tank. If there are multiple containers per lot mix equal parts of each lot into one sample from each tank.
- 3.4 Reference **Sample Conversion Table** at the end of this document for the number of samples to pull from each lot by container size.
- 3.5 All sample labels must include Date sampled, Lot Number, and Varietal(s).

4.0 Sampling from Small Vessels

- 4.1 With gloves on, open the bung on the drum or vessel.
- 4.2 If the container opening is large enough, use the thief with twine or a chain to obtain sample as seen in section above for **tanks with access to top**.
- 4.3 If container opening does not fit the thief, use the following materials:
 - 4.3.1 With the bottom end all the way submerged, push down on the handle so that the bottom stopper comes unplugged from the tube, allowing oil to enter the tube.
 - 4.3.2 Once filled pull up on the handle to close the bottom stopper. Pull the small vessel sampler out of the drum and empty sampled oil into a sample bottle. Repeat until the appropriate volume of oil is sampled.



- 4.4 Repeat with clean and dry tools until enough bottles are made.
- 4.5 Samples from individual small vessels do not need blending if it is one lot per vessel. If there are multiple containers per lot mix equal parts of each lot into one sample from each vessel.
- 4.6 Reference **Sample Conversion Table** at the end of this document for the number of samples to pull from each lot by container size.
- 4.7 All sample labels must include Date sampled, Lot Number, and Varietal(s).

Guidance Document Recommendations for number of packages to be sampled

ISO 5555:2003 Table 3 page 11 Conversion from KG to Gal.

Tanks greater than 1,510 gallons

Size of Tank	Volume of Tanks (gal)	Number of Bulk Samples for each Tank
≥151,017 gallons up to 200,000 gallons	1	2
> 1,439 gallons to 151,017 gallons	1	1

Drums/Totes/small tanks less than 1,510 gallons per container

Size of Package	Number of Packages in the Lot	Number of Packages to be sampled
≥5.8 gallons up to 1,314 gallons	1 to 5	all
	6 to 50	6
	51 to 75	8
	76 to 100	10
	101 to 250	15
	251 to 500	20
	501 to 1,000	25
	> 1,000	30
≥1.4 gallons and < 5.8 gallons	1 to 20	all
	21 to 200	20
	201 to 800	25
	801 to 1,600	35
	1,601 to 3,200	45
	3,201 to 8,000	60
	8,001 to 16,000	72
	16,001 to 24,000	84
	24,001 to 32,000	96
	> 32,000	108
<1.4 gallons	1 to 20	all
	21 to 1,500	20
	1,501 to 5,000	25
	5,001 to 15,000	35
	15,001 to 35,000	45
	35,001 to 60,000	60
	60,001 to 90,000	72
	90,001 to 130,000	84
	130,001 to 170,000	96
	>170,000	108

Olive Oil Density: 0.000912 kg/mL

Conversion 3785.41mL/1gal

Gallons=(Xkg /
0.000912kg/mL)/3785.41mL/gal